

HANDBOOK OF PHONOLOGICAL DATA
FROM A SAMPLE OF THE WORLD'S LANGUAGES

A Report of the Stanford Phonology Archive

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	010 Hausa	010 Hausa	010 Hausa
010	01 b [b-labialized] ⁶⁰ (free)	14 k-ejective-palatalized ^{02 65} (restricted,free) */k-ejective/	50 iota
010	02 b-implosive [b-implosive-labialized] ⁶⁰ (free)	15 t/s-hacek	51 i-long
010	03 t ⁰¹	16 d/z-hacek	52 e-mid ³³
010	04 d	17 phi ⁰³ [p] ³⁰ (free)	53 e-mid-long
010	05 d-implosive	18 phi-palatalized ³⁰	54 schwa ¹¹ [epsilon] ⁶³ (allo,free)
010	06 k ⁰¹ *[k-labialized] *[k-palatalized]	19 s ⁰⁴	55 a-long
010	07 k-labialized ^{02 60} (restricted,free) */k/	20 z ⁰⁴	56 upsilon
010	08 k-palatalized ⁰² (restricted,free) */k/ [65]	21 s-glottalized ⁰⁵ [t/s-ejective] ³¹ (free)	57 u-long
010	09 g *[g-labialized] *[g-palatalized]	22 s-hacek ⁰⁴	58 o-mid ³³
010	10 g-labialized ^{02 60} (restricted,free) */g/	23 m	59 o-mid-long
010	11 g-palatalized ^{02 65} (restricted,free) */g/	24 n ⁰⁶ [n-syllabic] ⁶² (free) [eng] ⁶¹ (allo,neutral)	60 yod
010	12 k-ejective *[k-ejective-labialized] *[k-ejective-palatalized]	26 l ⁰⁷	61 yod-glottalized
010	13 k-ejective-labialized ^{02 60} (restricted,free) */k-ejective/	27 r-trill ⁰⁸ *[r-flap]	62 w
		28 r-flap ⁰⁹ (tag(-),free) */r-trill/	80 high [mid] ⁶⁴
		29 glottal stop ³²	81 low
		30 h ¹⁰	82 high-falling ³⁴ [mid-falling] ⁶⁴
			83 higher-high ¹² (limited)
010	\$a Hausa \$b Kano \$d Chadic \$e N Nigeria; Niger Republic \$f 6 million \$g Jim Lorentz		
010	\$a Kraft, Charles H. and Marguerite G. Kraft \$b 1973 \$c Introductory Hausa \$g Berkeley: U.C. Press \$q informant \$r unknown		
010	\$a Greenberg, Joseph H. \$b 1941 \$c Some Problems in Hausa Phonology \$d Language 17.316-323 \$q informant \$r unknown		
010	\$a Abraham, R.C. \$b 1959 \$c Hausa literature and the Hausa sound system \$g London: University of London Press \$q informant \$r unknown		
010	\$a Abraham, R.C. \$b 1959 \$c The Language of the Hausa People \$g London: University of London Press \$q informant \$r unknown		
010	\$a Kraft, Charles H. \$b 1963 \$c A Study of Hausa Syntax \$f (Hartford Studies in Linguistics) \$g Hartford, Conn: The Hartford Seminary Foundation \$q informant \$r unknown		
010	\$a Hodge, Carleton T. \$b 1947 \$c An Outline of Hausa Grammar (Katsina dialect) \$f (Language dissertation No. 41) \$g Baltimore: LSA \$q informant \$r unknown		
010	\$a Hodge, Carleton T., and Ibrahim Umaru \$b 1963 \$c Hausa basic course \$g Washington D.C.:		

Foreign Service Institute \$q second author/informants \$r unknown (first author)

- 010 \$a Branner, Siegmund, and Michael Ashiwaju \$b 1966 \$c Lehrbuch der Hausa - Sprache \$g Muencher Max Hueber Verlag \$q second author
- 010 \$a Kraft, Charles H. and A.H.M. Kirk-Greene \$b 1973 \$c Hausa \$f (Teach Yourself Books) \$g London: Collins \$q informant \$r unknown
- 010 \$a INTONATION \$A With regard to interrogative intonation, "typically...the last high tone in an utterance will jump to a pitch level of the previous high tone syllable. A following low tone will drop only one step rather than all the way down to pitch level 1 as in the narrative contour." Utterances which contain interrogatives have the basic pattern of the narrative contour but are distinguished from both narrative and interrogative intonation in that "(1) the whole utterance is typically on a slightly higher pitch, and (2) the final tone of the utterance, if a high tone, becomes a falling tone." This intonation is also used for vocative utterances. See K&K, p.30-36 for examples.
- 010 \$a INTONATION \$A "The total pitch component (tone plus intonation) of a Hausa utterance can be described...in terms of five pitch levels." K & K give three basic intonational types: 1) narrative intonation 2) interrogative intonation 3) vocative intonation. Within the posited five pitch levels, "the pattern, therefore, of narrative intonation-JL1 is to drop 2 steps from a high tone to a following low tone and to jump up one step from a low tone to a following high tone with two qualifications: (1) an initial low tone will actualize on pitch level 3 but the following high tone...will still jump up to pitch level 5; and (2) a final low tone will, no matter what the length of the utterance, always fall on pitch level 1." They add, however, that long utterances are "frequently broken into more than one intonational contour, especially in slow, more deliberate speech." p.30, 31)
- 010 \$a REDUPLICATION \$A The first syllable of a verb is reduplicated in order to form the "intensive." Notice that the tone and all phonemes of the first syllable are exactly reduplicated. Thus, if the tone on the first syllable is low, the tone on the reduplicated syllable is low. If the first syllable ends in a consonant, that consonant is reduplicated along with the rest of the syllable. (Assimilation of the reduplicated final consonant to the initial consonant may optionally occur for syllable final non-nasals. (K&K-G, p.176)) The initial consonant of the stem is doubled when preceded by a reduplicated open syllable. In class 1 nouns (and some of class 3) the plural is formed by a two syllable suffix the medial consonant of which is identical to the stem final consonant. The vowels depend on the noun class.
- 010 \$a STRESS \$A "1. Stress is non-phonemic.... 2. Stress usually falls on syllables possessing high tone. 3. When a series of high tone syllables is followed by a low tone, the last high tone syllable (that immediately preceding the low tone syllable) typically carries greater stress than the preceding high tone syllables." (K & K, p.37)
- 010 \$a SYLLABLE \$A (C)V(:)(C) \$A (C)V:C does not occur. Labialized and palatalized C are analyzed as units. Syllable-final /yod, w/ are analyzed as C. (See Greenberg.)
- 010 \$a TONE \$A domain of tone: syllable
- 010 \$a VOWELS \$A Hausa scholars differ as to the number of vowel phonemes that they posit for Hausa. Greenberg gives ten vowel phonemes in "pausal" position (i.e. before silence), five long and five short vowels. In "non-pausal" position Greenberg gives eight vowels (short /e-mid/ and /o-mid/ being neutralized to /schwa/ (Greenberg's "a") in this environment). Kraft 1963 (following Hodge 1947, p.18) posits eight vowels (short /e-mid/ and /o-mid/ being excluded). K & K posit five vowel phonemes which can occur both long and short (apparently following Hodge and Umaru 1963, p.16). But in actual practice it appears that the analysis in terms of five vowel phonemes is equivalent to the analysis in terms of ten vowel phonemes (distinctions of length always being indicated).
- 010 \$a VOWELS \$A Most sources indicate that the high and mid short vowels are generally somewhat lower than their longer counterparts. (K & K, p.27; H & U, p.16-17; Kraft, p.22) Greenberg (p.320) says that there is no difference in vowel quality between short and long vowels in "pausal" position. But in "non-pausal" position, short high vowels (/i/ and /u/) are apparently lowered to "lower-high" and are lax. "In pause, all vowels are tense." (Greenberg, p.320) K & K (p.27) add that long vowels are approximately twice as long as short vowels. But Greenberg (p.320) makes the distinction that in "pausal" position "...the difference of length between short and long vowels is extremely reduced." H & U (p.17) say that "the contrast in length is not so clear when the vowel is final and has low tone."
- 010 01 \$A /t, k/ "are slightly aspirated...in all positions." (K & K, p.37)
- 010 02 \$A Greenberg recognizes a series of velar palatalized and labialized stops which contrast, in particular, before /schwa/ and /a-long/. (There is also said to be a contrast before /i-long/ and /u-long/.) K & K do not recognize such stop phonemes, but consider all such cases as either phoneme sequences (before /schwa/ and /a-long/) or derived according to assimilatory rule. Greenberg's analysis is partly motivated by the fact that an analysis in terms of phoneme

sequence would violate the simple CV syllable structure of Hausa. Greenberg (p.321) supposes that the contrast between labialized and palatalized velars before /schwa/ arose from the palatalization and labialization of these velars before original /e-mid/ and /o-mid/ which were later reduced to /schwa/.

- 010 03 \$A In producing /phi/ "the airstream passes through a constricted space occasioned by the near meeting of the lips." (K & K, p.25)
- 010 04 \$A In producing /s, z, s-hacek/ "the tongue is formed so that the air is only allowed to escape along a groove in the middle of the tongue." (K & K, p.25)
- 010 05 \$A /s-glottalized/ is formed "with simultaneous glottal closure." (K & K, p.25)
- 010 06 \$A For /n/ K & K (p.24-25) use the term "alveolar." Kraft (1963, p.20) uses the term "dental" and "fronted alveolar." In Hodge's analysis of the Katsina dialect, /n/ is termed "dental." But Brauner and Ashiwaju call /n/ (of the Kano dialect) "alveolar."
- 010 07 \$A For /l/ "the tongue [is] pressed against or just behind the base of the upper teeth." (K & K, p.26) In the consonant chart (p.24) /l/ is listed as an "alveolar," and on p.39 it is called "alveolar." The terms "fronted" (p.26) and "slightly fronted" (p.39) are used without being elucidated.
- 010 08 \$A /r-trill/ is called "alveolar retroflex," (K & K, p.40) in addition to "alveolar." It is made with "a rapid flapping of the tongue tip against the alveolar ridge." (K & K, p.26) K & K (p.52) say that both /r-trill/ and /r-flap/ "typically...occur in the speech of any native speaker of Kano Hausa." However, they go on to point out that the distinction between these two sounds is not preserved in many Hausa dialects.
- 010 09 \$A /r-flap/ is described as "retroflex;" it is not clear what this means, since the place of articulation is specified as "the front of the alveolar ridge." It is "produced by a single rapid flap of the tip of the tongue against the front of the alveolar ridge." It often sounds very much like /l/. (K & K, p.26) "In rapid speech /r-trill/ may be reduced to a single flap." (K & K, p.26) As K & K point out the flap allophone of /r-trill/ is hardly distinguishable from /r-flap/. In the Archive /r-flap/ is treated both as an independent phoneme and an allophone of /r-trill/.
- 010 10 \$A "The Hausa /h/ may involve friction either in the pharyngeal cavity or throughout the mouth." (K & K, p.25) "Frequently, when the friction [occurs through the mouth--JL], the lips are rounded and it is unclear whether it is best to represent the sound thus produced by the /h/ symbol or with the /phi/ symbol." (K & K, p.25)
- 010 11 \$A Most sources indicate that /schwa/ is "mid." This appears to be the value given by Abraham (1959 (HSS), p.127) and by Greenberg (p.320), who maintains that "short /a/" does not differ in vowel quality from long /a/ in "pausal" position. In "non-pausal" position, it apparently becomes "mid" and "lax."
- 010 12 \$A /higher-high/, "which resembles somewhat the compound tone [falling tone--JL] in its pronunciation, produces a rise in the pitch of surrounding syllables and is itself marked by an extremely high pitch, higher than that of the compound tone, accompanied by a non-phonemic lengthening of its vowel." It appears to occur only with words which have some kind of "emphatic meaning." (Greenberg, p.319f)
- 010 30 \$A [p] is "an occasional alternative to 'f' [phi]." (Abraham 1959 (LHP), p.2) Greenberg investigated a Kano dialect which is different from the one encoded here with respect to [p]. In that dialect, the speakers only pronounced [p], never [phi], apparently. Greenberg also gives a /p-palatalized/ phoneme, a phoneme not mentioned by K & K. (Cf. Greenberg, p.316, 322) Greenberg also gives /phi-palatalized/ for dialects of Kano which have /phi/ instead of /p/.
- 010 31 \$A [s-glottalized] is the usual pronunciation. (K & K, p.25)
- 010 32 \$A K & K imply that /glottal stop/ is not phonemic in word initial position (p.51) although they include it in a set of 25 consonant phonemes. (p.23) They say that "the /glottal stop/ occurs predictably at the beginning of every word starting with a vowel." (p.51) But /glottal stop/ is, in any case, phonemic in medial position, where it is not predictable. (In the orthography it is only written in medial position.) K & K also note (p.39) that /glottal stop/ "also often occurs as a kind of 'cut-off' after final short vowels." Greenberg unequivocally states that /glottal stop/ "must be considered a distinct phoneme," due to its behavior in reduplications. (p.316)
- 010 33 \$A The status of the short mid vowels is questionable. There is no contrast with the long mid vowels except possibly before pause.
- 010 34 \$A "We may refer to this combination of the two tone phonemes [high tone and low tone--JL] as falling tone but recognize that it is not a third tone phoneme but merely a complex of the two tone phonemes falling on the same syllable." (K & K, p.29) According to Greenberg (p.320) the compound tone occurs only on syllables with a long vowel, or with a final consonant, which

might "be classified together as two-mora syllables." Greenberg considers this tone to be phonemic, refers to it as "the compound tone" and says that "in its pronunciation it does not fall, but is pronounced on a slightly higher level than a high tone would be in the same position in an utterance, and with considerably more stress. With this exception, stress and tone go hand in hand in Hausa, a higher tone being accompanied by correspondingly heavier stress. It is this disparity between tone and stress that constitutes the distinguishing feature of the compound tone." (p.319)

- 010 60 \$A Bilabial and velar stops may be labialized before round vowels. (p.157)
- 010 61 \$A In consonant clusters nasals assimilate to the place of a following consonant. Before /w/ they become [ɛŋ]. (p.109)
- 010 62 \$A /n/ becomes [n-syllabic] when a preceding high vowel in the same syllable is (optionally) deleted. (Greenberg, p.317f)
- 010 63 \$A /schwa/ is realized as [ɛpsilon] after a palatal or before a syllable that contains a front vowel. (Abraham (1959 (HSS), p.127) gives a similar rule but without the palatal environment.)
- 010 64 \$A High tones are lowered to mid after a low tone. (Greenberg, p.318)
- 010 65 \$A Velar stops may be palatalized before front vowels. (p.184) (The palatalization may be realized as an onglide to the stop when it follows /a-long/. (p.184))